

Flight Scientist Report  
Saturday 03/20/2021 ACTIVATE RF55

Flight Type: Statistical Survey Flight

Flight Route: ATLIC ZIBUT ATUGI 36.33/-70.33 ATUGI ZIBUT ATLIC

Special Notes: This is the first of 2 joint flights planned for today; however, only one flight (this one) was conducted due to manpower issues for the Falcon in second flight. Really interesting layer of depolarizing aerosol right above clouds near the end of flight; possible residual layer of sea salt in dry conditions.

### King Air

Pilot report (Delaney): Science flight for the UC-12 in support of ACTIVATE Campaign #3, conducted cooperatively with the HU-25. Departed Rwy08 to ATLIC climbing to 23k ft MSL for initial transit and then descended to 21k FT MSL just prior to ZIBUT due to high cirrus clouds. Research profiles conducted from ATLIC-ZIBUT-ATUGI-3620N/07020W-ATUGI-ZIBUT-ATLIC-KLFI. Winds were predominantly from the W-SW at ~30 kts. Maintained mostly clear air flight with infrequent obscuration due light cirrus layer. Briefly encountered a mid-level layer in the vicinity of ATUGI that may have degraded Lidar data collection effort. Deployed 4 dropsondes at the preplanned locations. Aircraft geolocation was within ~20 nmi throughout the flight, and generally remained with ~10 nmi during the research-focused portion. All objectives were achieved and no system discrepancies were noted - pending post-flight data analysis.

Pilots: Coldsnow/Sandeen

QNCs: Shingler

Flight scientist report (Shingler): Flight plan "B" was flown as drafted with a route through AR9 to ZIBUT, ATUGI, to the NE, ATUGI, ZIBUT and back to KLFI. Cirrus at flight altitude forced the King Air to operate at 21kft for successful lidar and polarimeter operations. A consistent low-level cloud deck was present from ~4-7km with occasional mid-level interruptions. A total of four sondes were dropped (ZIBUT, eastern most point of the route, ATUGI, and near the coast). All instruments were operating successfully during flight.

### Falcon

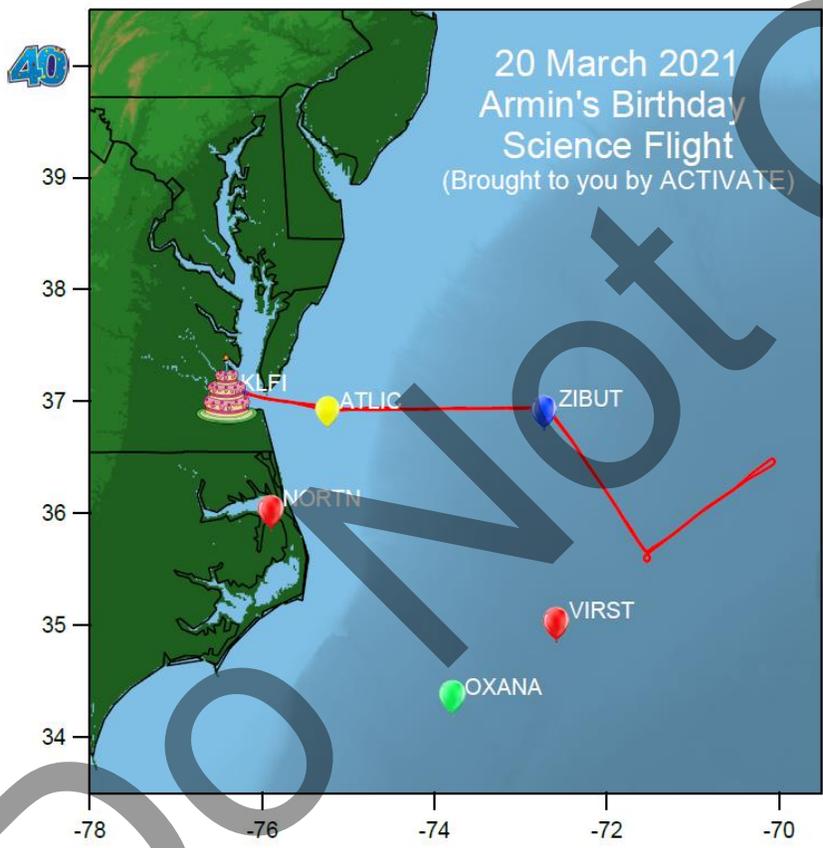
Pilot report (Luke Delaney): Science flight for the HU-25 in support of ACTIVATE Campaign #3, conducted cooperatively with the UC-12. Departed Rwy08 to ATLIC climbing to 5k ft MSL for initial transit. Research profiles conducted from ATLIC-ZIBUT-ATUGI-3620N/07020W-ATUGI-ZIBUT-ATLIC-KLFI. Winds were predominantly from the E-NE at ~20-30 kts with an offshore layer initially encountered from ~2-4 k FT MSL (ATLIC-ZIBUT), followed by a clear section approaching ZIBUT, and then a more complex layer ranging from ~1.6-7 k FT MSL near ATUGI extending through the turn point. Both cloud and clear air modules were completed

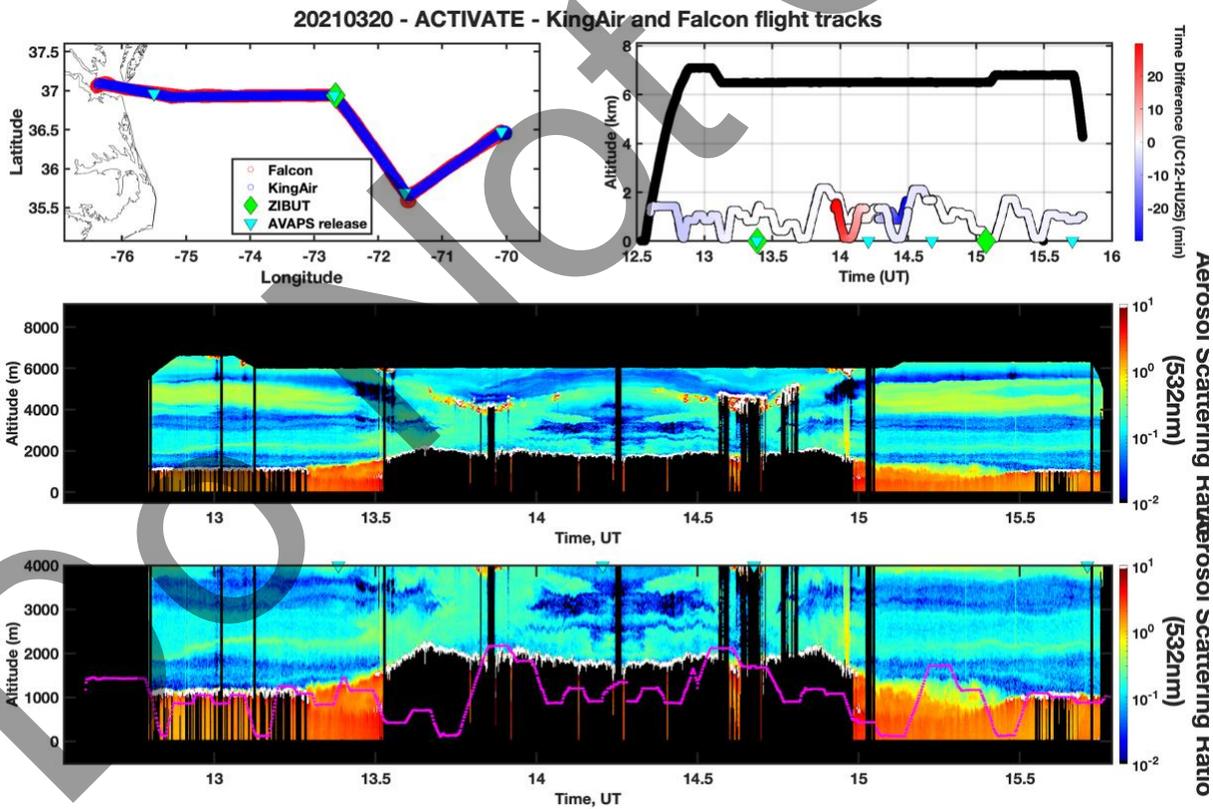
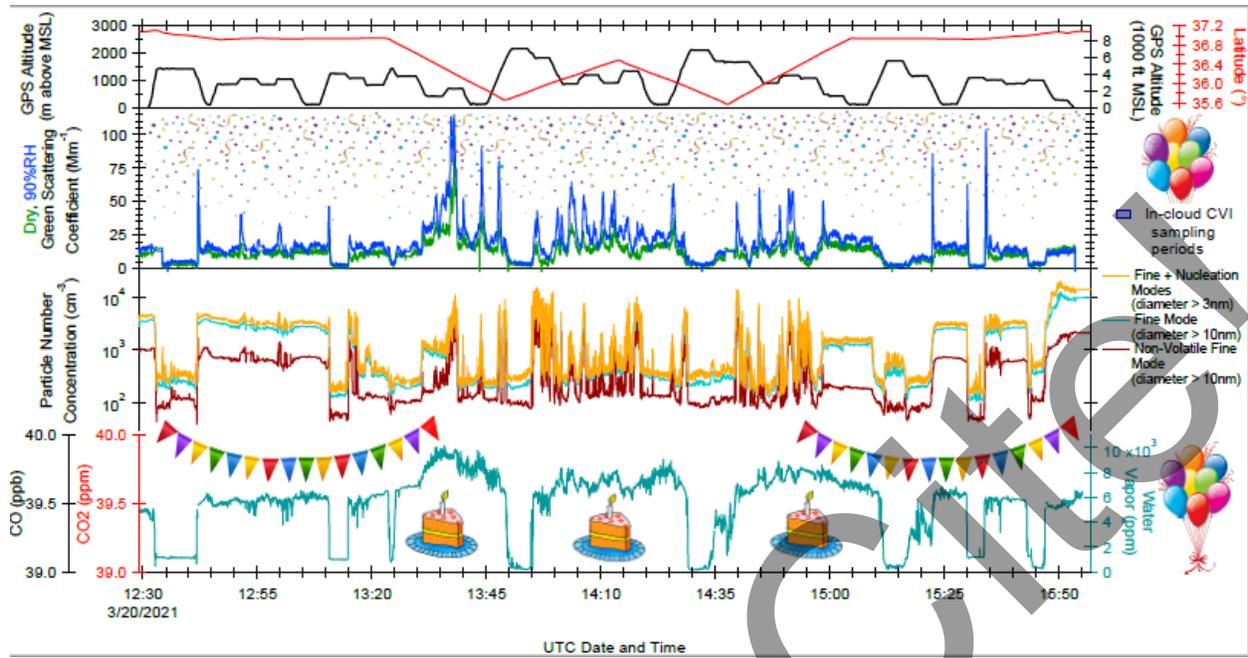
throughout the flight as conditions warranted, ranging from 500 – 7500 FT MSL. Aircraft geolocation was within ~20 nmi throughout the flight, and generally remained with ~10 nmi during the research-focused portion. All objectives were achieved and no system discrepancies were noted - pending post-flight data analysis.

Pilots: Elder/Delaney

QNCs: Crosbie/Winstead

Flight scientist report:

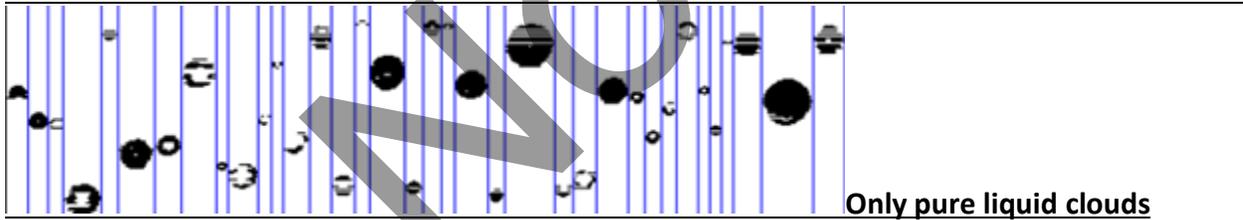
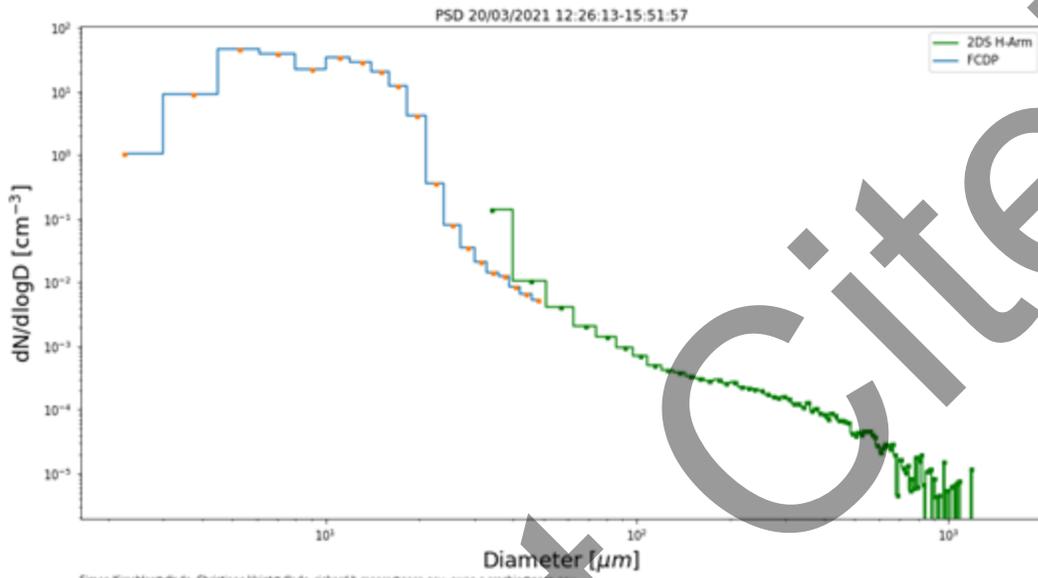






# PSD ACTIVATE

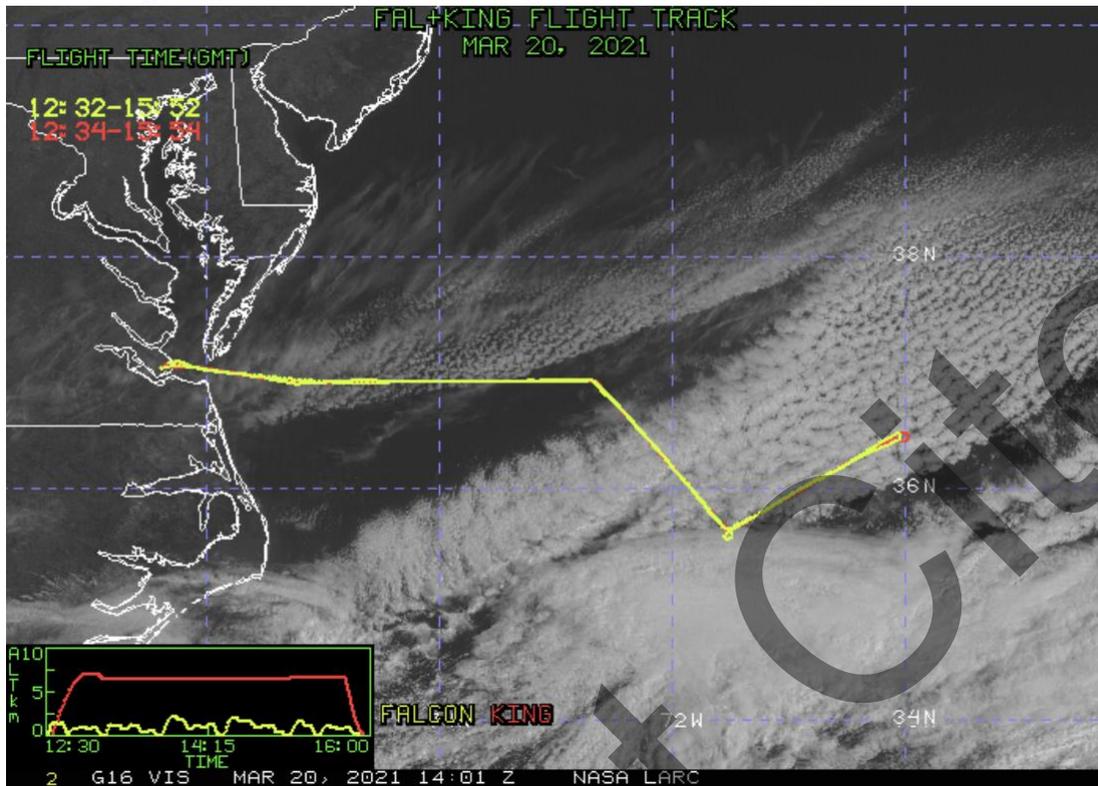
preliminary data, only for quicklook use  
Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie



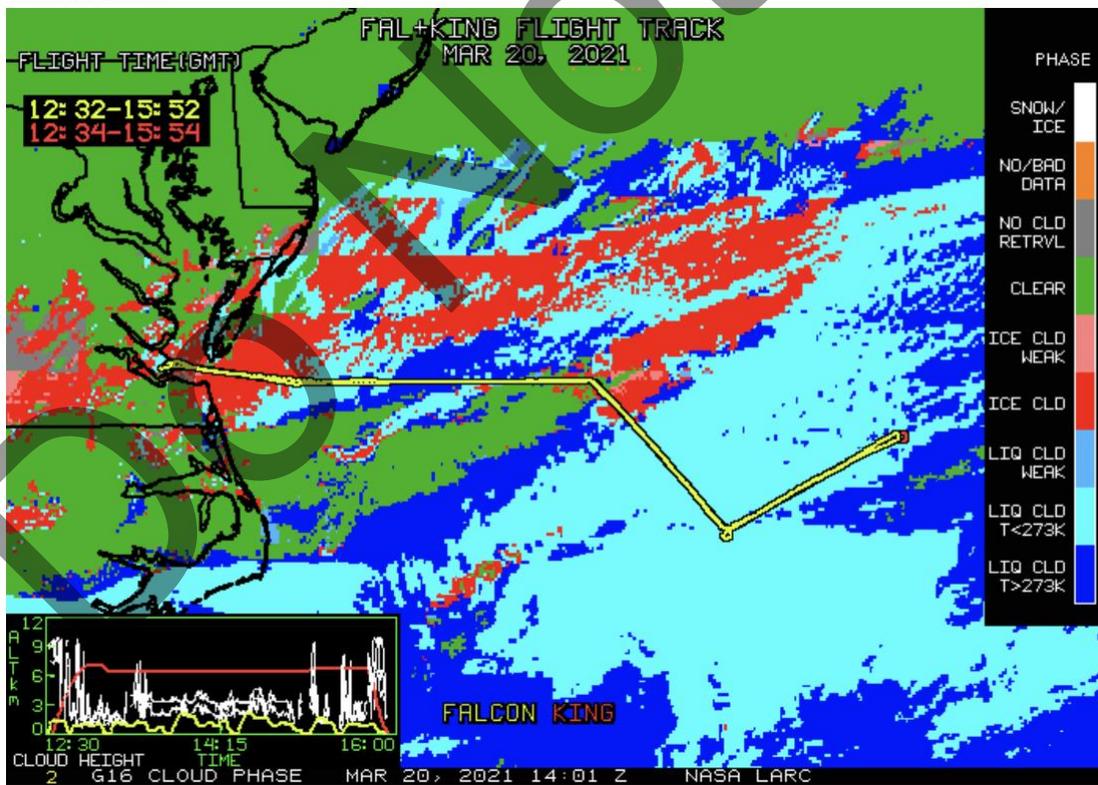
NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 55, 14:01 UTC Mar 20, 2021

Do Not Cite!

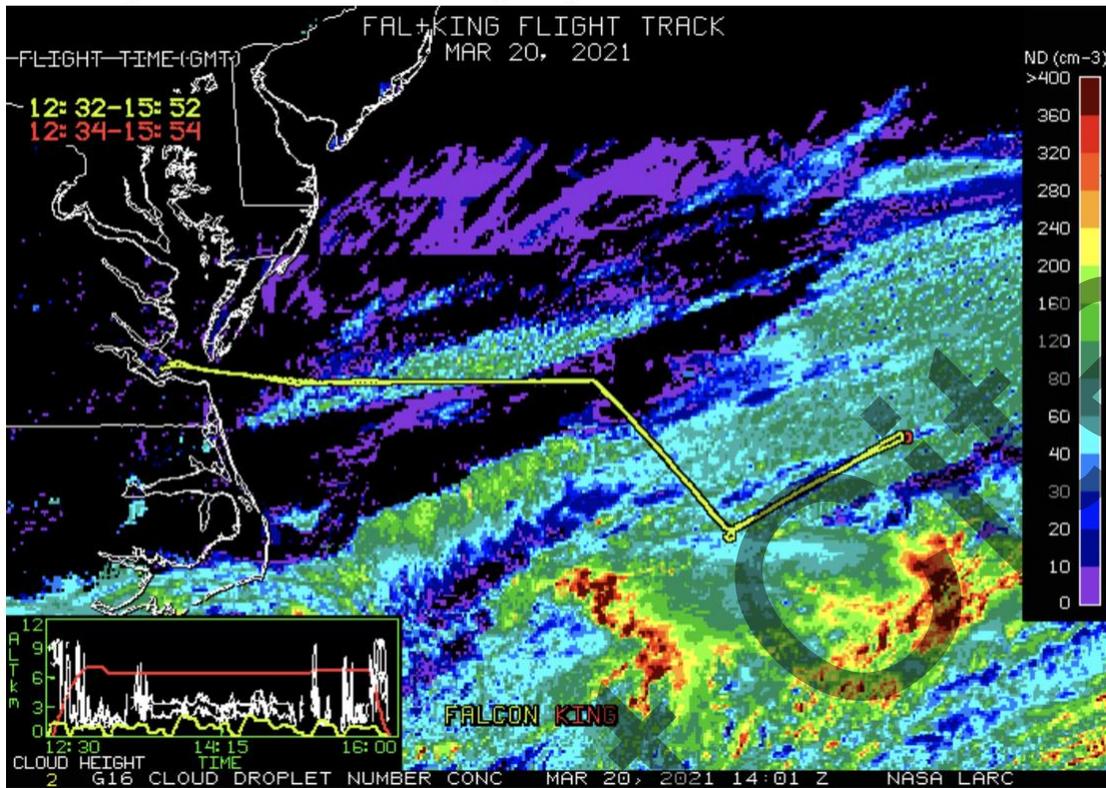
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm-3)



Cloud-Top Height (Kft-ASL)

